

Chapter 22

Applications of Mobile Learning in Higher Education: An Empirical Study

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ABSTRACT

As mobile devices' use among consumers accelerates at an exponential rate, there is a need to examine how these mobile devices can be used as effective learning tools and not just a form of communication. In this paper, the authors use an empirical survey methodology to study various mobile learning tools that are currently available for use in higher education, their advantages and disadvantages in m-learning versus e-learning implementations, and to explore the current trends in m-learning.

INTRODUCTION

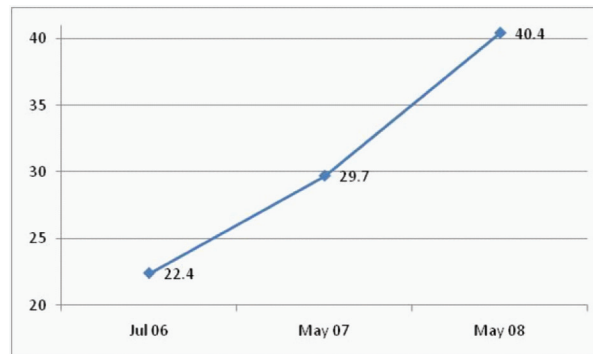
Development of information technology and use of internet has brought about major changes to the traditional educational paradigm, with electronic learning (e-learning) using the Internet is emerging as an alternative channel of education to the traditional face-to-face education. E-learning plays an important role at the different levels of education settings. E-learning provides advantages in terms of time and space compared to the

traditional classroom type of education (Weekes, 2006; Slevin, 2000). It is expected that e-learning providing remote or distance learning capability could be a viable alternative to the traditional face-to-face education.

Recent advances in mobile technology have enabled a variety of mobile technology applications to learning. Mobile devices include cellular phones, personal digital assistants (PDAs), MP3 players, smart phones, portable game devices, handhelds, tablets, and laptops (Wagner, 2005).

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Figure 1. Active users of mobile internet in the United States (in millions)



More and more people from all ages use mobile devices, and it appears that they are familiar with using these devices (Wagner, 2005). It is estimated that the mobile phones are currently used by 50 percent of world population and is expected to grow to 80 percent in 2013, which would be about 5.8 billion people worldwide, compared to 1.5 billion people in 2004 (IBM Study Finds, 2008; Prensky, 2004). This number is considered to be at least three times more than that of PCs (Muyinda, 2007). In the U.S., in one year between January 2008 and January 2009, the number of people who used web-enabled mobile devices such as smart phones *every day* grew from 10.8 million to 22.4 million (Kolakowski, 2009). In 2008, the United States had 15.6% active mobile Internet usage penetration rate with 40 million mobile subscribers who use these services at least once in a month (Figure 1), of these about 39.2% are in age group of 18-34 years (Nielsen Mobile, 2008).

In today's society, there is a constant influx of new information. Therefore, having the ability to learn by making use of technology that is better suited to deliver knowledge and resources in real-time is a becoming a necessary skill in itself. By adding the mobile technologies that enable capability to learn "anytime, anywhere, e-learning is transformed into mobile learning (m-learning). For this reason, m-learning can be used as an effective tool to support classroom material, introduce new ways of learning, and help enhance

study skills. Moreover, with younger populations becoming acquainted with technology at an earlier age, its effects on learning may have a powerful impact.

One of the major advantages using technology in education is its effect on raising learners' motivation to learn. This phenomenon is more evident for the younger generations who grew up using computers in their daily lives. Since this generation is used to the fun activities and various learning tools available in digital realm, traditional ways of learning sometimes does not appeal to them. However, with the use of technology, learning process does not have to be boring. In the e-learning context, interactive and fun activities are possible to implement. Moreover, since a young learner's attention span is usually very short, fun and interactive activities that invite learners' active participation are more effective (Koo, 2008).

This research examines how these mobile devices can be used as effective learning tools. Also, we explore the various kinds of learning tools that use mobile technology are currently available. In particular, the current trend and people's awareness about m-learning is surveyed. This study focuses on the following research questions:

1. What kinds of learning tools using mobile technology are currently available?

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